SOSST Data Products

GOAL: Facilitate use of SOSST data by a broader community

- Climate modelers
- General satellite community
  Aura / Aqua / Terra / NPOESS
  Envisat / Odin / ADEOS
- Campaign support
- NPOESS 2nd generation design

What SOSST data products are most useful to the modeling community?

What SOSST data should comprise an archival set of climate data records?

How can we best package SOSST data for efficient validation of Aura or other future data sets?

How can we best package the SOSST data to form a comprehensive baseline science data set for future investigations?

Unified SOSST Data Sets

"Integrate" data from different instruments

Limitations of current data sets:

- Instrument-specific distribution
- Variable data format
- Sparse geographic coverage
- Varying temporal coverage
- No cross-calibration between instruments

Level 1

Data from all SOSST instruments at a single distribution site in a uniform format

Standard constituent data

- Format: NCDF, HDF, IDLsave, etc.
- Concentration vs. Mixing ratio
- Altitude vs. Pressure
- Consistent “fill” values

Standard meta data

- Longitude (-180° to 180° or 0° to 360°)
- Time (seconds, hours, fractional days)
- Date (doy, julian day, yyyymmdd)
- SR/SS notation

Level 1 (continued)

Data from all SOSST instruments at a single distribution site in a uniform format

Standard error bars

- Percent, ppmv, cm^{-3}, etc.
- Common error sources

  (e.g., cross-sections, signal noise, pointing, dark counts, species separation, sunspots, clouds, line-of-sight inhomogeneities, etc.)

Standard Ancillary (Meteorological) Data

- Source: MetO, GEOS-4, ECMWF, NCEP, etc.
- Historical consistency
- Content: PV, T, P, Z (trop), EqLat, etc.

Level 2

Same as level 1, but measurements of common constituents are normalized based on validations

Level 3

Same as level 2, but spatially gridded data

- Data from all instruments together
- Interpolation to nearest lat/lon grid point
- Standard altitude/pressure scale

Level 4

Move toward a global product

- PV-mapping
- Trajectory Mapping/Domain Filling
- Formal Data Assimilation

Higher Levels

Climatologies // Interannual Variability
Seasonal Cycles // Trends

- Gas species
- Aerosol extinction & microphysical properties
- Cirrus clouds, PSCs, PMCs

Unified SOSST Data Set

Concept Definition

Broad atmospheric science community:
What's needed?

SOSST algorithm and validation experts:
What's feasible?

Concept Implementation

Begin planning throughout this meeting

Data Products Poster Session

1.5 Hours Total

DP-1 to DP-13: First Half

DP-14 to DP-27: Second Half